Indian Institute of Technology Kanpur

Department Mechanical Engineering

Enquiry for acquiring an electro-hydraulic exciter

Enquiry Number: IITK/ME/ML/2017-18/EHE

Original Enquiry date: 13-10-2017

Original Closing date: 31-10-2017 (5 pm)

Extended closing date: 08-11-2017 (5 pm)

Sealed quotations (in two separate envelops marked separately as "Technical Bid" and as 'Financial bid' are invited as per the specifications, and terms and conditions listed below.

Quantity required: 1

Supply of an electro-hydraulic exciter with the following specifications:

Specifications:

The electro-hydraulic exciter (EHE) should be capable of applying static and dynamic loads to structures to enable measurements of structural dynamics, i.e. frequency response functions.

- Static load capability: 700 N to 7000 N, controllable
- Dynamic load capability: 250 N to 1500 N, controllable
- Frequency range: the EHE should be capable of applying controllable dynamic loads between 0 (static) to 800 Hz. Force Frequency range should similar to the diagram (fig-1) below:

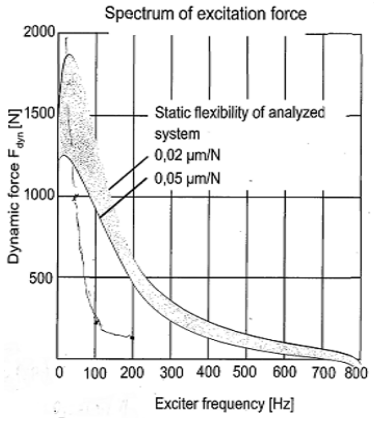

Figure 1

- Static and dynamic load should be independently settable
- The EHE should have facility to set gain.
- Servo/proportional valve should be of the Bosch or Parker make
- Hydraulic power supply: 210 supply pressure with a flow of 15 lpm. Motors and drive pumps on the hydraulic power pack should be optimally selected.
- Maximum oil temperature should be limited to 60°C
- Physical dimensions of the EHE alone (without the hydraulic power pack and hydraulic hoses etc.) should be less than: 200 mm x 180 mm x 150 mm

- Weight of the EHE alone (without the electrical panel/ laptop, hydraulic power pack and hydraulic hoses etc.) should be less than 15 kg
- Controller: EHE should be controlled and monitored using National Instruments (NI) Hardware and LabView software. NI hardware must include a controller with minimum four slots, of which one slot must be unused. Other slots may be used for control, voltage input and voltage output as necessary.
- EHE should be controllable in the frequency sine sweep mode, in sinusoidal mode, and in the random mode of excitations
- Software necessary for control and monitoring will be part of scope of supply.
- Supply should include one Laptop computer configured and loaded with the necessary software.
- Laptop configuration (minimum): 4 GB RAM or higher, 512 GB Hard disc or higher, and processor Intel Core i5 or higher
- Data acquisition: provisions to capture set load, actual load, and acceleration in three directions should be made available. Data should be savable in the CSV format.
- Mounting details of the EHE should be supplied in the technical bid document
- Hydraulic power pack should be optimally designed to occupy minimum floor area
- Hydraulic hose lengths should be at least 3 m, and pressure drops should be kept to a minimum
- Specifications of all devices being used (load cells, servo valve, NI hardware, laptop, etc.) should be provided in the Technical bid
- Provision should be provided, for mounting suitable position transducer mechanically on the exciter.

Terms and Conditions:

- Maximum education discount, if any should be offered
- Validity of quotation should be at least for 60 days
- The price quoted should be for delivery at Kanpur.
- Terms and conditions for the payment, including the banker's name of the principal and the account number
- Proprietary certificate, if relevant, should be provided.
- Delivery must be within 16 weeks from issuance of purchase order/indent
- The institute reserves the right of accepting and rejecting any quotation without assigning any reason.
- The indenter reserves the right to cancel the tender without being answerable.
- The Technical Bid should contain detailed technical specification of the product being offered and should not mention any price.
- The Financial Bid should include the detailed price quotation clearly including the cost of the equipment, taxes, service charges if any, shipping and handling charges.

Kindly submit the Technical and Financial bids in two separate sealed envelopes addressed to:

Dr. Mohit Law
Department of Mechanical Engineering
Indian Institute of Technology Kanpur
Kanpur 208016
+91 512-679-6897 (O); +91 9717103329 (M)
Email: mlaw@iitk.ac.in